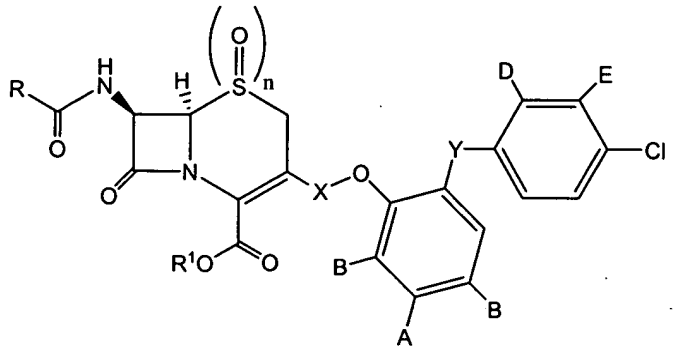
NEW CLAIMS

74. A compound having the following structure:



wherein:

n is 0, 1 or 2;

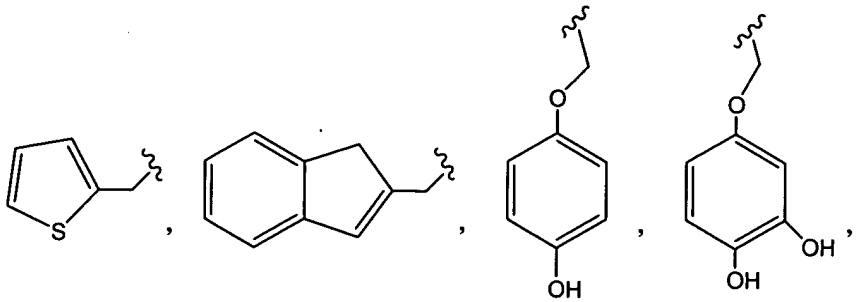
X is selected from the group consisting of CH_2, cis-$CH{=}CHCH_2$, trans-$CH{=}CHCH_2$, $CH_2OC(=O)$, $NHC(=O)O$, $C{\equiv}CCH_2$, SO_2, $NHCH_2CH_2CH_2NHC(=O)$ and $CH_2C_6H_5OCH_2$;

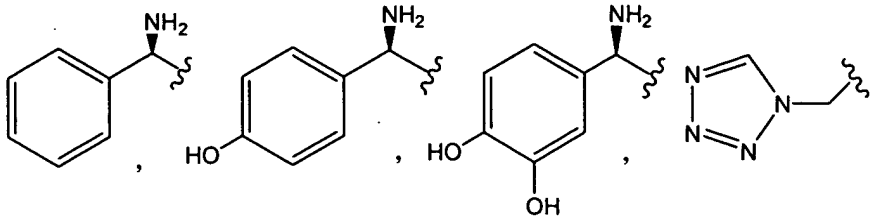
Y is selected from the group consisting of oxygen and C(=O)NH, wherein,

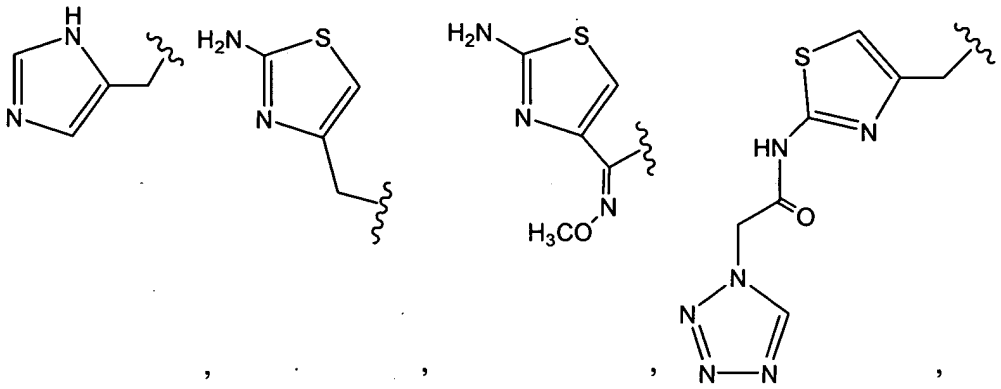
when Y is oxygen, A and D are chlorine and B and E are hydrogen;

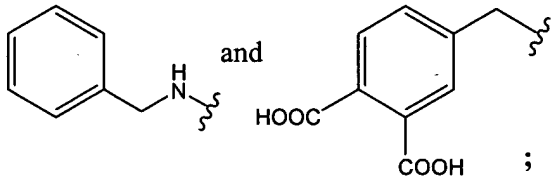
when Y is C(=O)NH, B and E are chlorine and A and D are hydrogen;

R is selected from the group consisting of CH_3, $HOCH_2CH_2$, $H_2NC(=NH)NHCH_2CH_2$, $HOC(=O)CH_2CH_2$, $H_2NC(=O)NH$, C_6H_5, $C_6H_5CH_2$, $C_6H_5OCH_2$ and $(PEG)OC(=O)CH_2CH_2$,









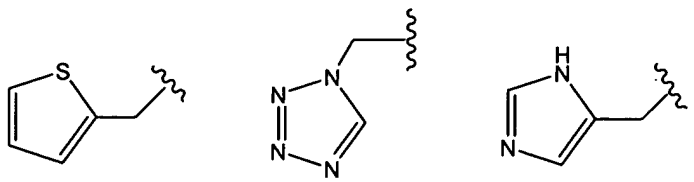
and

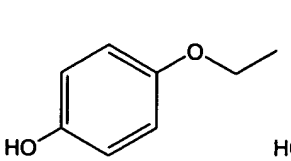
R^1 is selected from the group consisting of hydrogen, Li^+, Na^+, $(C_1 - C_6)_mN(H)_{4-m}^+$ and polyethyleneglycolyl, wherein m is 0 – 3.

75. The compound of claim 74, wherein n is 0.

76. The compound of claim 75, wherein X is CH_2.

77. The compound of claim 76, wherein R is selected from the group consisting of: $NH_2C(=NH)NHCH_2CH_2$,





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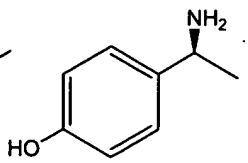

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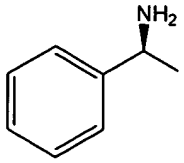
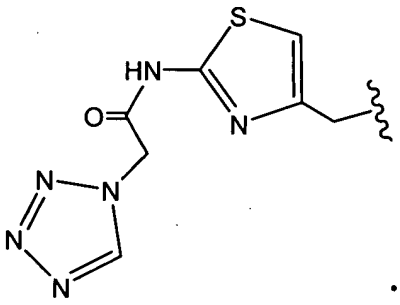


and


.

78. The compound of claim 74, wherein the compound is 3-(2-(2,4-dichlorophenoxy)-5-chlorophenoxy)methyl-7-(2-thienylacetamido)-3-cephem-4-carboxylic acid (Compound 9).

79. The compound of claim 74, wherein the compound is 3-(2-(2,4-dichlorophenoxy)-5-chlorophenoxy)methyl-7-(1-tetrazoleacetamido)-3-cephem-4-carboxylic acid (Compound 29).

80. The compound of claim 74, wherein the compound is 3-(2-(2,4-dichlorophenoxy)-5-chlorophenoxy)methyl-7-[2-(3*H*-imidazol-4yl)]-acetamido-3-cephem-4-carboxylic acid (Compound 31).

81. The compound of claim 74, wherein the compound is 3-(2-(2,4-dichlorophenoxy)-5-chlorophenoxy)methyl-7-(1-phenyl-2-aminoacetamido)-3-cephem-4-carboxylic acid (Compound 38).

82. The compound of claim 74, wherein the compound is 3-(2-(2,4-dichlorophenoxy)-5-chlorophenoxy)methyl-7-[4-(2-aminothiazole)-yl-2-acetamido]-3-cephem-4-carboxylic acid (Compound 39).

83. The compound of claim 74, wherein the compound is 3-(2-(2,4-dichlorophenoxy)-5-chlorophenoxy)methyl-7-[2-(4-hydroxyphenoxy)acetamido]-3-cephem-4-carboxylic acid (Compound 40).

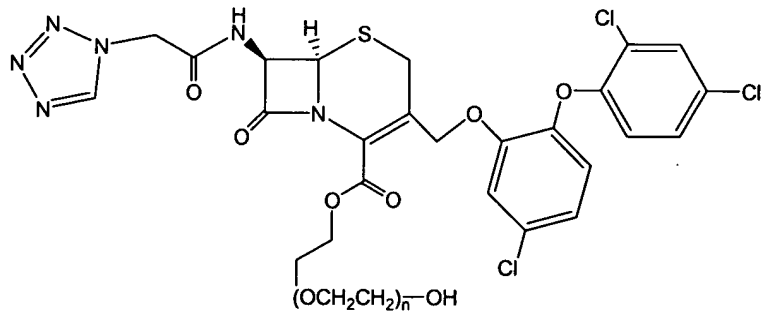
84. The compound of claim 74, wherein the compound is 3-(2-(2,4-dichlorophenoxy)-5-chlorophenoxy)methyl-7-[2-amino-2-(4-hydroxyphenyl)acetamido]-3-cephem-4-carboxylic acid (Compound 41).

85. The compound of claim 74, wherein the compound is 3-(2-(2,4-dichlorophenoxy)-5-chlorophenoxy)methyl-7-(3-guanidinylpropyl)acetamido-3-cephem-4-carboxylic acid (Compound 42).

86. The compound of claim 74, wherein the compound is 3-(2-(2,4-dichlorophenoxy)-5-chlorophenoxy)methyl-7-{2-[2-(2-tetrazol-1-yl-acetamido)-thiazol-5-yl]-acetamido}-3-cephem-4-carboxylic acid (Compound 43).

87. The compound of claim 74, wherein the compound is 3-(2-(2,4-dichlorophenoxy)-5-chlorophenoxy)methyl-7-(2-thienylacetamido)-1-oxo-3-cephem-4-carboxylic acid (Compound 11).

88. The compound of claim 74, wherein the compound has the structure:

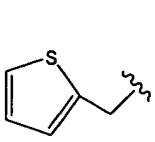
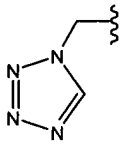


wherein n is 4 to 2000 (Compound 32)

89. The compound of claim 74, wherein X is cis-CH=CHCH$_2$ or trans-CH=CHCH$_2$.

90. The compound of claim 89, wherein R^1 is hydrogen.

91. The compound of claim 90, wherein R is selected from the group consisting of

 and  .

92. The compound of claim 91, wherein n is 0.

93. A composition, comprising:

a pharmaceutically acceptable carrier; and,

a compound of claim 74.

94. A method of inhibiting the growth of a microorganism comprising contacting the microorganism with an effective amount of a compound of claim 74.

95. The method of claim 94, wherein the microorganism expresses a β-lactamase.

96. The method of claim 95, wherein the microorganism is selected from the group consisting of *Staphylococcus aureus, Staphylococcus epidermidis* and other coagulase-negative staphylococci, *Streptococcus pyogenes, Streptococcus pneumoniae, Streptococcus agalactiae, Enterococcus* species, *Corynebacterium diphtheriae, Listeria monocytogenes, Bacillus anthracis, Neisseria meningitidis, Neisseria gonorrhoeae, Moraxella catarrhalis, Vibrio cholerae, Campylobacter jejuni, Enterobacteriaceae, Pseudomonas aeruginosa, Acinetobacter* species, *Haemophilus influenzae, Clostridium tetani, Clostridium botulinum, Bacteroides* species, *Prevotella* species, *Porphyromonas* species, *Fusobacterium* species, *Mycobacterium tuberculosis, and Mycobacterium leprae*, with the proviso that when the compound is 3-(2-(2,4-

dichlorophenoxy)-5-chlorophenoxy)methyl-7-(2-thienylacetamido)-3-cephem-4-carboxylic acid, the microorganism is not *Pseudomonas aeruginosa.*

97. The method of claim 95, wherein the microorganism is selected from the group consisting of *Staphylococcus aureus, Staphylococcus epidermis, Enterococcus faecalis* and *Enterococcus faecium.*

98. A method for treating a microbial infection, comprising administering to a subject in need thereof an effective amount of a compound of claim 74.

99. The method of claim 98, wherein the microorganism expresses a β-lactamase.

100. The method of claim 99, wherein the microorganism is selected from the group consisting of *Staphylococcus aureus, Staphylococcus epidermidis* and other coagulase-negative staphylococci, *Streptococcus pyogenes, Streptococcus pneumoniae, Streptococcus agalactiae, Enterococcus* species, *Corynebacterium diphtheriae, Listeria monocytogenes, Bacillus anthracis, Neisseria meningitidis, Neisseria gonorrhoeae, Moraxella catarrhalis, Vibrio cholerae, Campylobacter jejuni, Enterobacteriaceae, Pseudomonas aeruginosa, Acinetobacter* species, *Haemophilus influenzae, Clostridium tetani, Clostridium botulinum, Bacteroides* species, *Prevotella* species, *Porphyromonas* species, *Fusobacterium* species, *Mycobacterium tuberculosis, and Mycobacterium leprae*, with the proviso that when the compound is 3-(2-(2,4-dichlorophenoxy)-5-chlorophenoxy)methyl-7-(2-thienylacetamido)-3-cephem-4-carboxylic acid, the microorganism is not *Pseudomonas aeruginosa.*

101. The method of claim 99, wherein the microorganism is selected from the group consisting of *Staphylococcus aureus, Staphylococcus epidermis, Enterococcus faecalis* and *Enterococcus faecium.*